

SUPPORT FOR THE AMENDMENT

Support for the amendment to claim 3 is found beginning at page 9, lines 7 through page 10, line 2 of the specification. Support for claim 17 is found on page 11, line 10-15 of the specification.

No new matter would be added to this application by entry of this amendment.

Upon entry of the amendment, claims 3 and 12-17 will now be active in this application.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a method of antifouling and washing hard surfaces.

Applicants wish to thank examiner DelCotto for the helpful and courteous discussion held with their U.S. representative on February 15, 2007. At that time, applicants' U.S. representative argued that there was no disclosure of the claimed monomer ratio nor the unexpected improvement in anti-fouling properties obtained there from. The following is intended to expand upon the discussion with the examiner.

In the claimed invention, re-deposition of fouling, very often observed in toilet bowls, can be prevented, even with washing several times, with maintenance by initial antifouling. In particular, toilet bowl surfaces are treated with an antifouling detergent composition comprising a polymer having a specific monomer ratio. Such a monomer ratio based polymer is advantageous and provides for the prevention of the re-deposition.

The references of record do not describe or suggest such a method of antifouling and washing hard surfaces of *toilet bowls*.

The rejections of claims 3 and 12-15 under 35 U.S.C. § 103(a) as obvious over Jeschke et al U.S. 6,251,849 in view of Pucci et al U.S. 5,872,088 and Aubay et al. U.S. 6,703,358, of claims 3 and 12-16 under 35 U.S.C. § 103(a) as obvious over Aubay et al. U.S. 6,593,288 in view of Pucci et al U.S. 5,872,088 or Aubay et al. U.S. 6,703,358; of claims 3 and 12-16 under 35 U.S.C. § 103(a) as obvious over Pucci et al U.S. 5,872,088 or Aubay et al. U.S. 6,703,358 each in view of Aubay et al U.S. 6,593,288 are respectfully traversed.

None of Jeschke et al, Pucci et al or Aubay et al. U.S. '358 describe a polymer in which the amine containing monomer has two alkylene groups  $R^1R^2C=C(R^3)-X-$ , as claimed.

According to each of Jeschke et al. and Aubay et al. the quaternary nitrogen is substituted with a group  $CH_2=(R^1)CONH-(CH_2)_n-$ . There is no disclosure of a quaternary nitrogen which is substituted with two groups of  $R^1R^2C=C(R^3)-X-$ . Pucci et al. fails to describe a polymer in which there is any amine group.

In contrast, the claimed invention is directed to a method in which an anti-fouling detergent composition comprises a polymer containing monomer A which has a quaternary nitrogen which is substituted with two groups of  $R^1R^2C=C(R^3)-X-$ . This is a claim limitation which is clear by applicants' definition of the group  $R^4$  and the limitation of the definition of X to  $C_{1-12}$  alkylene groups. As these three references fail to disclose or suggest a quaternary nitrogen which is substituted with two groups of  $R^1R^2C=C(R^3)-X-$ , none of these references can suggest the claimed invention.

Aubay et al. U.S. '288, generally describes polymer composition for use on various hard surfaces, and for dishwashing, which is not the claimed invention. However, there is no showing or indication of antifouling and washing the hard surfaces of *toilet bowls* with a composition having a monomer ratio in the claimed range.

Aubay et al. simply describes a copolymer in which the ratio of quaternized amine monomer (a) to ionizable monomer (b) is from 60/40 to 5/95 (column 3, lines 16-17), there is no suggestion of improved anti-fouling performance if the amount of quaternized amine were to exceed that of a second polymerizable monomer. In each of inventive polymers 1, 2, 3 and 7, the amount of quaternized amine monomer is **less than** that of the second polymerizable monomers. As the examiner recognized, “ ‘288 does not teach a method of antifouling and washing had surfaces of toilet bowls using a composition containing specific cationic polymer” (page 9 of official action).

In contrast, the claimed invention is directed to a method of antifouling and washing in which the polymer is a copolymer of a quaternized amine monomer (A) and a second polymerizable monomer (B) in which the ratio of monomer (A)/monomer (A) + monomer (B) is from 0.5 to 0.9. Applicants note that the claims have been amended to reflect such a compositional requirement. Thus, in the claimed polymer the amount of quaternized amine monomer (A) exceeds that of a second polymerizable monomer (B). Applicants have discovered an improved antifouling property when the ratio is as claimed, as compared with when the amount of second polymerizable monomer exceed that of quaternized amine monomer.

As evidence of the improved anti-fouling properties when using a polymer as claimed, the examiner's attention is directed to the data appearing in Table 1, on page 31 of applicants' specification.

Polymer E used in comparative example 1-3 is a polymer of 30 mole % diallyldimethyammonium chloride and 70 mol % acrylamide. The test sample exhibited little or considerable fouling in the water-sealed region and slight fouling in the front and water-line regions of a toilet.

In contrast, inventive products 1-1 to 1-10 formulated with polymers A and B, polymers in which the concentration of diallyldimethylammonium chloride **exceeds** that of the second polymerizable monomer, each demonstrated little or **no** fouling. Thus, by selection of a ratio of quaternized amine monomer to second polymerizable monomer as claimed, applicants are able to realize an improvement in antifouling performance, which is not suggested by the reference.

As applicants have discovered a ratio of quaternized amine monomer to second polymerizable monomer which provides improved antifouling performance, the claimed invention is clearly not obvious over the cited references and withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

The provisional rejection of claims 3 and 12-16 over claims 5, 6, 8 and 9 of co-pending application U.S. 10/500,859 is respectfully traversed.

None claims 5, 6, 8 or 9 of U.S. '859 claim a monomer (B) as claimed in a ratio of from 0.5 to 0.9. More specifically, none of the claims of the co-pending application claim (i) an anionic group-containing monomer, (ii) an amide group-containing monomer, (iii) an ester group containing monomer or (iv) a further polymerizable monomer, as claimed.

Conversely, the  $\text{-SO}_2\text{-}$  containing monomer of the claims of the co-pending application would not have made obvious the currently claimed second polymerizable monomers. Thus, in the absence of one way obviousness, the provisional rejection for obviousness-type double patenting is believed to be improper and should be withdrawn.

Application No. 10/500,469  
Reply to Office Action of December 21, 2006

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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